AMENDMENT

In the Claims:

This listing of claims will serve to replace all prior versions and listings of claims in the present application:

1. (previously amended) A rotary liquefied natural gas boil-off compressor comprising at least two compression stages in series, a gas passage passing through the series of compression stages, the gas passage extending through and being in heat exchange relationship with at least one cooling means disposed between the compression stages, wherein the at least one cooling means is a cryogenic cooling means having valve means for controlling flow of cryogenic coolant into the cryogenic cooling means in response to an inlet temperature, or a related parameter, of the compression stage next in series downstream of the cryogenic cooling means to maintain said inlet temperature at a temperature between chosen sub-ambient temperature limits.

2. (previously amended) The compressor according to claim 1, wherein the cryogenic cooling means comprises an indirect cooling means.

3. (previously amended) The compressor according to claim 1, wherein the cryogenic cooling means comprises a direct cooling means.

4. (previously amended) The compressor according to claim 3, wherein the direct cooling means comprises a chamber having an inlet for the introduction of a cryogenic liquid.

5. (previously amended) The compressor according to claim 4, wherein the direct cooling means comprises an outlet in communication with a

vessel adapted to disengage particles of liquid from natural gas, the vessel having an outlet for the natural gas to communicate with said next compression stage.

6. (previously amended) The compressor according to claim 1, further comprising a cryogenic cooling means intermediate each pair of successive compression stages.

7. (previously amended) The compressor according to claim 1, wherein there are at least three compression stages in sequence, at least one direct cryogenic cooling means and at least one indirect cryogenic cooling means.

8. (currently amended) The compressor according to claim 7, wherein an inlet of the at least one direct cryogenic cooling means communicates with an outlet of the at least one indirect cryogenic cooling means.

9. (previously amended) The compressor according to claim 1, comprising a cryogenic cooling means downstream of a final stage of the series of compression stages.

10. (previously amended) The compressor according to claim 1, comprising a cryogenic cooling means upstream of a first stage of the series of compression stages.

11. (previously amended) The compressor according to claim 1, wherein the compressor comprises an intermediate inlet communicating with a forced liquefied natural gas vaporiser.

12. (previously amended) A liquefied natural gas storage tank having an outlet for boiled-off natural gas communicating with the compressor of claim 1, said cryogenic cooling means in communication with the liquefied natural gas in the storage tank.

13. (previously amended) A method of operating a rotary liquefied natural gas boil-off compressor having at least two compression stages in series and a gas passage passing through the series of compression stages, the method comprising cooling compressed boiled-off natural gas by a cryogenic coolant downstream of one of the compression stages and upstream of another one of the compression stages in series, monitoring an inlet temperature, or a related parameter, of the compressed natural gas at an inlet to the other compression stage, and adjusting a flow rate of the cryogenic coolant to maintain said inlet temperature at a temperature between chosen sub-ambient temperature limits.

14. (previously amended) The method according to claim 13, wherein the inlet temperature of each of the compression stages is maintained at a temperature in the range of minus 50 °C to minus 140°C.

15. (previously amended) The method according to claim 14, wherein the pressure ratio across each of the compression stages is in the range 2.15 : 1 to 3 : 1.

16. (previously amended) The method according to claim 14, wherein the pressure ratio across each of the compression stages is in the range 2.5 : 1 to 3 : 1.